



10th Marseille Winter School on Multi-Scale Porous Materials

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1st Research workshop of the USERS - CNRS International Research Network - on Urban Physics

January 24-29 2022

Polytech-AMU / CINaM

Aix-Marseille University, Campus de Luminy, 13288 Marseille

Organized under the auspices of CNRS and Polytech-AMU

Organizers:

- Prof. Emanuela Del Gado (Physics Dpt, Georgetown University, Washington-DC, US): ed610@georgetown.edu
- Dr. Roland Pellenq (EpiDaPo Lab - CNRS / George Washington University, Washington-DC, US): roland.pellenq@cnrs.fr
- Prof. Philippe Dumas (Polytech-AMU and Centre Interdisciplinaire des Nanosciences de Marseille, CINaM, AMU-CNRS): philippe.dumas@univ-amu.fr, dumas@cinam.univ-mrs.fr
- Dr. Christophe Bichara (Centre Interdisciplinaire des Nanosciences de Marseille, CINaM, AMU-CNRS): bichara@cinam.univ-mrs.fr

Lecturers (institution/contact info):

- Prof. Marta Gonzalez CEE and City/ Regional Urban Planning, University of California at Berkeley, : martag@berkeley.edu
- Prof. Alain Baronnet (Centre Interdisciplinaire des Nanosciences de Marseille, CINaM, AMU-CNRS, Marseille): baronnet@cinam.univ-mrs.fr
- Dr. Jérémie Berthonneau (Centre Interdisciplinaire des Nanosciences de Marseille, CINaM, AMU-CNRS, Marseille : berthonneau@cinam.univ-mrs.fr

- Prof. Edo Boek, (Dept. of Chemistry, University of Cambridge, UK): esb30@cam.ac.uk
- Prof. Emanuela Del Gado (Dpt of Physics, Georgetown U., Washington DC, US): ed610@georgetown.edu
- Dr. Pierre Levitz (PHENIX, CNRS/Université Pierre et Marie Curie, Paris, France): pierre.levitz@upmc.fr
- Prof. Henri Van Damme (SIIM, ESPCI, Paris): henri.van-damme@wanadoo.fr
- Prof. Konstantin Sobolev (dpt of Civil Engineering, University of Wisconsin at Milwaukee): sobolev@uwm.edu
- Dr. Timm Weitkamp (SOLEIL Synchrotron, Gif/Yvette, France): weitkamp@synchrotron-soleil.fr
- Dr. Laurent Brochard (Ecole Nationale des Ponts et Chaussées, Paris): laurent.brochard@enpc.fr
- Dr. Romain Dupuis (Institut Gerhardt, Montpellier) : romain.dupuis@umontpellier.fr

Program / Curriculum

- **Henri Van Damme:** Multiscale porous materials science for food, water and health: Setting-up the scene
- **Romain Dupuis:** Deep Learning in Material Science modeling
- **Alain Baronnet:** Electron microscopy for multi-scale porous materials, methods
- **Marta Gonzalez:** Modeling flux and networks
- **Emanuela Del Gado:** Soft Matter Physics; glass Physics, jamming transition and arrested dynamics, insights for numerical simulations
- **Jérémie Berthonneau:** Electron microscopy for multi-scale porous materials, application to clays, cement, shale-gas...
- **Timm Weitkamp:** Tomography with Synchrotron light and the texture of multiscale porous materials
- **Pierre Levitz:** Multi-scale Porous and colloidal materials, texture and transport properties
- **Edo Boek:** Meso-scale simulations of porous multiscale materials
- **Konstantin Sobolev:** Nanotechnology in construction materials
- **Laurent Brochard:** Atomistic computer simulation techniques and nanoscale mechanics

Monday Jan. 24th: MWS2022, day 1

8h30-9h00: Registration

09h00-09h15: Opening remarks, Roland Pellenq / Christophe Bichara / Philippe Dumas

09h15-10h45: Henri Van Damme, Construction materials for energy and Environment, setting up the stage

10h45-11h00: Coffee break

11h00-13h00: Roland Pellenq / Philippe Dumas / Christophe Bichara,
Designing research projects through SPEED DATING

13h00-14h30: Lunch (CROUS)

14h30-16h00: Laurent Brochard: Essential of atomistic computer simulations
and nanoscale mechanics

16h00-16h30: Coffee break

16h30-18h00: Marta Gonzalez: Modeling flux and networks

Tuesday Jan. 25th: MWS2022, day 2

09H00-10h30: Romain Dupuis, Deep Learning in Material Science modeling

10h30-11h00: Coffee break

11h00-12h30: Pierre Levitz, Multi-scale porous and colloidal materials, texture
and transport properties

12h30-14h00: Lunch (CROUS)

14h00-15h30: Emanuela Del Gado, Soft Matter Physics; glass Physics, jamming
transition and arrested dynamics, insights from numerical simulations

15h30-16h00: Coffee break

16h00-17h30: Alain Baronnet, Jérémie Berthouneau, Electron microscopy for
multi-scale porous materials, application to clays, cement, shale-gas

Wednesday Jan. 26th: MWS2022, day 3

09h00-10h30: Edo Boek, Statistical physics and computer simulation
techniques at the mesoscale

10h30-11h00: Coffee break

11h00-12h30: Timm Weitkamp, Tomography with Synchrotron light and the
texture of multiscale porous materials

12h30-14h00: Lunch (CROUS)

14h00-15h30: Konstantin Sobolev, Nanotechnology in construction materials

15h30-16h00: Coffee break

16h00-16h30: Speed dating ceremony awards

16h30-18h30: Cocktail

Thursday Jan. 27th till Saturday Jan. 29th : IRN-USERS Research workshop (24 talks)

Useful tips

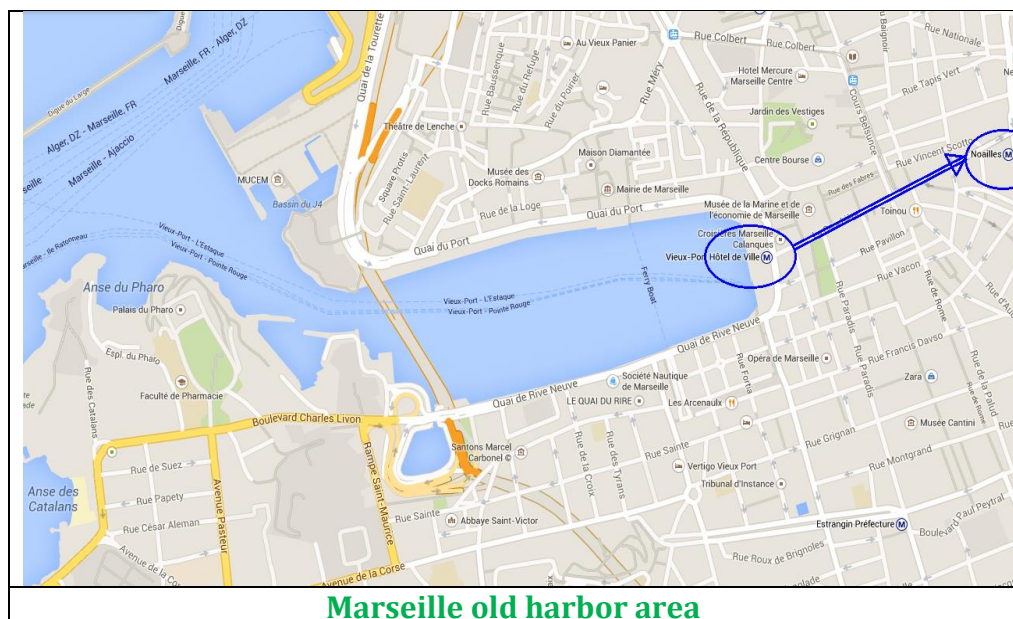
How to get to Luminy campus from Marseille old harbor area (Vieux Port) using Marseille public transportation system (RTM, a 40 min trip, [see map](#), ticket can be purchased from automatic machines or front desk):

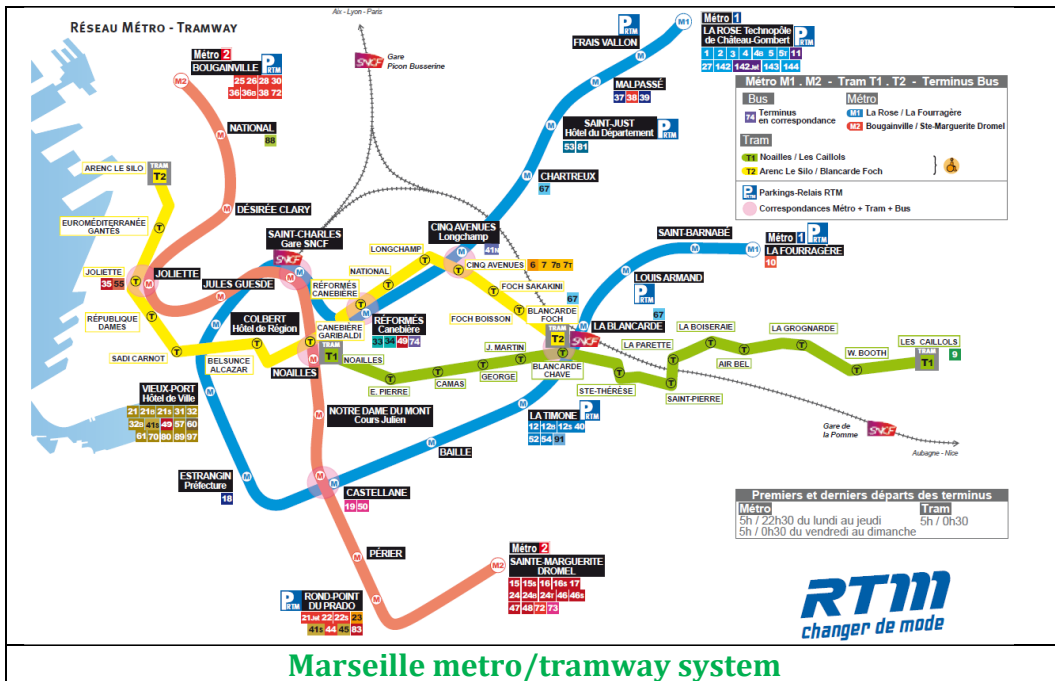
- Go to metro station “Noailles (orange line/ Line #2)”
- Get on train, direction Bougainville/St Marguerite-Dromel
- Get off at Stade Vélodrome/Rond Point du Prado
- Get on bus #21 or Jet-bus
- Luminy is the final stop (campus entrance is straight ahead, go through the gates and straight on, ESIL Polytech School will be on your left after the immense “Faculté des Sciences” building, [see map](#))
- Follow the signs to Derrien theater

Or

- Go to metro station “Noailles (orange line/ Line #2)”
- Get on train, direction Bougainville/St Marguerite-Dromel
- Get off at Bougainville/St Marguerite-Dromel (last stop)
- Get on bus #24
- Luminy is the final stop (you’ll see campus entrance on your right, go through the gates and straight on, ESIL Polytech School will be on your left after the immense “Faculté des Sciences” building, [see map](#))
- Follow the signs to Derrien theater

Contact: +33 6 62 92 28 33 (R. Pellenq's cell phone)





Marseille metro/tramway system



Luminy Campus, Aix-Marseille University